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**Presidency University**

**Bengaluru**

**School Of Computer Science and Engineering & Information Science**

**End-Term Examinations, Aug 2024**

**Date**: 5-8-2024

**Time**: 1:00 to 4:00

**Max Marks**: 100

**Weightage**: 50%

**Odd Semester**: 2023 - 24

**Course Code**: CSA2020

**Course Name**: Artificial Intelligence

**Department: IS&E**

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

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| **Q.No** | **Questions** | **Marks** | **CO** | **RBT** |
| 1 | 1. Explain the characteristics of AI approach. | 4 | CO1 | L1 |
| 1. Define Agent and its types with a neat diagram. | 6 | CO1 | L2 |
| 1. Draw a neat diagram and explain the architecture of Utility-Based Agents | 10 | CO1 | L3 |
| OR | | | | |
| 2 | 1. What is the primary function of a simple reflex agent? | 4 | CO1 | L1 |
| 1. Define Artificial Intelligence and provide examples of its applications in everyday life. | 6 | CO1 | L2 |
| 1. Evaluate the ethical implications of using Artificial Intelligence in decision-making processes, considering issues such as bias, accountability, and transparency | 10 | CO1 | L3 |

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| 3 | 1. Explain the primary purpose of knowledge representation in artificial intelligence? | 4 | CO1 | L1 |
| 1. What is logic? And explain its three components. | 6 | CO2 | L2 |
| 1. Explain the types of reasoning with examples? | 10 | CO2 | L3 |

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| 4 | 1. Discuss the limitations of using propositional logic in AI reasoning and decision-making | 4 | CO2 | L1 |
| 1. Explain the strength and weakness of the AI in the real world Scenario. | 6 | CO1 | L2 |
| 1. How can more advanced logical systems address these limitations, and what role do they play in enhancing the capabilities of AI systems? | 10 | CO2 | L3 |

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| 5 | 1. Explain the three systems that enhance the AI capabilities. | 4 | CO3 | L1 |
| 1. What is Abductive reasoning and explain with an example. | 6 | CO3 | L2 |
| 1. Describe Logics rules in propositional logics? | 10 | CO3 | L3 |

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| 6 | 1. Discuss the role of inference mechanisms in Knowledge-Based Agents. | 4 | CO3 | L1 |
| 1. How does a Knowledge Base contribute to the decision-making process of a Knowledge-Based Agent? Provide examples of different types of knowledge that could be stored in a Knowledge Base. | 6 | CO3 | L2 |
| 1. What distinguishes a Knowledge-Based Agent from a Goal based reflex agent in Artificial Intelligence? Explain with examples. | 10 | CO3 | L3 |

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| 7 | 1. Discuss the strengths and weaknesses of predicate logic as a method of knowledge representation. How does predicate logic handle uncertainty and incomplete information? | 4 | CO4 | L1 |
| 1. Compare and contrast the following knowledge representation techniques: semantic networks, frames, and production rules. Provide examples to illustrate the differences between these approaches | 6 | CO4 | L2 |
| 1. What are the advantages and limitations of Knowledge-Based Agents compared to other types of agents, such as reflex agents or goal-based agents? | 10 | CO4 | L3 |

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| 8 | 1. What is a Knowledge-Based Agent in Artificial Intelligence? | 4 | CO4 | L1 |
| 1. How does a Knowledge-Based Agent differ from a Reflex Agent? | 6 | CO4 | L2 |
| 1. What are the components of a Knowledge-Based Agent? | 10 | CO4 | L3 |

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| 9 | 1. Give an example of a Knowledge-Based Agent application in everyday life | 4 | CO1 | L1 |
| 1. What are the advantages and limitations of Knowledge-Based Agents? | 6 | CO1 | L2 |
| 1. Comparison of Knowledge Representation Techniques: Semantic Networks, Frames, and Production Rules | 10 | CO1 | L3 |

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| 10 | 1. Strengths and Weaknesses of Predicate Logic as a Method of Knowledge Representation | 4 | CO2 | L1 |
| 1. How the AI will handle the Handling Uncertainty and Incomplete Information | 6 | CO2 | L2 |
| 1. What are the types of Machine Learning technologies that drives the AI to the super model era. | 10 | CO2 | L3 |